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Operating manual
Compact balance

KERN FXN

Version 1.0
11/2014
GB

FXN-N-BA-e-1410

GB

KERN FXN-N

Version 1.0 11/2014

Operating manual

Compact balance

English

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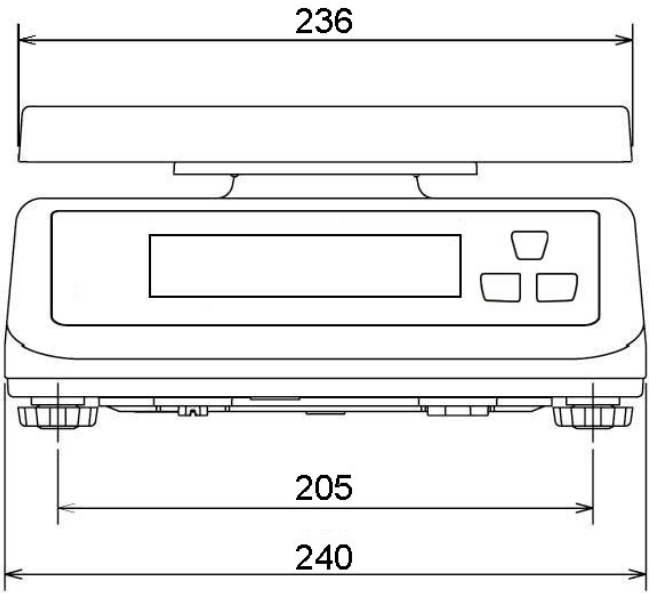
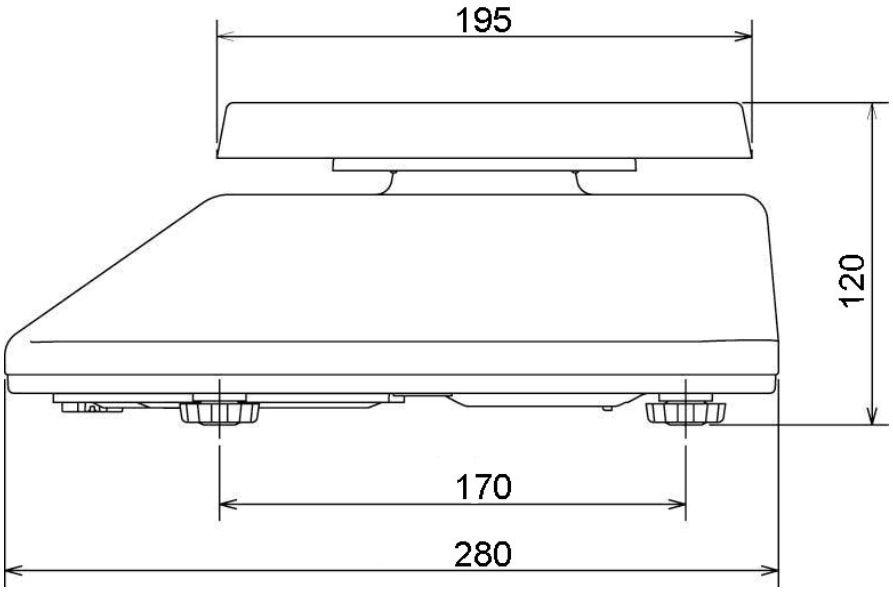
1 Technical data

KERN	FXN 3K -3	FXN 6K -3	FXN 10K -3	FXN 30K -2
Weighing range (max)	3 kg	6 kg	15 kg	30 kg
Readability (d)	1 g	2 g	5 g	10 g
Reproducibility	1 g	2 g	5 g	10 g
Linearity	2 g	4 g	10 g	20 g
Recommended adjustment weight, not added (class)	3 kg (M3)	6 kg (M3)	15 kg (M3)	30 kg (M3)
Stabilization time (typical)	2 sec.			
Units	g, kg, lb, oz,			
Warm-up time	10 min.			
Electric Supply	Battery operation: 6 x 1.5V Size D			
Auto-Off (rechargeable battery)	15 min., 5 min., 3 min., off			
Display type	LCD, digit height 25 mm			
Operating temperature	0° C …. + 40° C			
Humidity of air	25 % - 95 % (non-condensing)			
Dimensions of weighing plate (Stainless steel) (mm)	236 x 195			
Casing dimensions	240 x 280 x 120			
Dimensions, completely assembled (mm)	240 x 280 x 120			
Weight kg (net)	4.0			
IP protection	IP68 to DIN 60529			

English

1.1 Dimensions

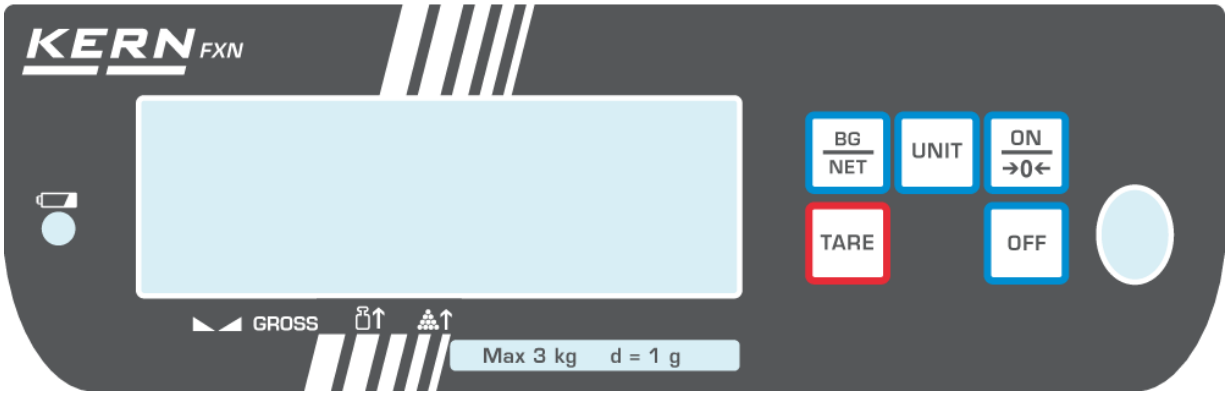




2 Appliance overview

2.1 Overview of display

2.1.1 Not verifiable models



Display	Designation	Description
→0←	Zeroing display	Should the balance not display exactly zero despite empty scale pan, press the ON →0← button. The balance will be set to zero after a short standby time.
◣◢	Stability display	Scales are in a steady state
NET	Net weight display	Net weight will be displayed
	Capacity display Battery	Full battery capacity
kg	Display Weighing unit kg	Displayed weight in kg

English

2.2 Keyboard overview

Button	Designation	Function
	ON-button, zero button	Switch-on, set to zero
	OFF-button	Switching Off
	TARE button	Tare balance
	Unit button	Switch-over units
	Switch-over button	Switch-over gross weight / net weight

English

3 Basic Information (General)

3.1 Proper use

The balance you purchased is intended to determine the weighing value of material to be weighed. It is intended to be used as a “non-automatic balance”, i.e. the material to be weighed is manually and carefully placed in the centre of the weighing pan. As soon as a stable weighing value is reached the weighing value can be read.

3.2 Improper Use

Do not use balance for dynamic weighing. In the event that small quantities are removed or added to the material to be weighed, incorrect weighing results can be displayed due to the “stability compensation“. (Example: Slowly draining fluids from a container on the balance.)
Do not leave permanent load on the weighing pan. This may damage the measuring system.
Impacts and overloading exceeding the stated maximum load (max) of the balance, minus a possibly existing tare load, must be strictly avoided. Balance may be damage by this.
Never operate balance in explosive environment. The serial version is not explosion protected.
The structure of the balance may not be modified. This may lead to incorrect weighing results, safety-related faults and destruction of the balance.
The balance may only be used according to the described conditions. Other areas of use must be released by KERN in writing.

3.3 Warranty

Warranty claims shall be voided in case

- Our conditions in the operation manual are ignored
- The appliance is used outside the described uses
- The appliance is modified or opened
- Mechanical damage or damage by media, liquids, natural wear and tear
- The appliance is improperly set up or incorrectly electrically connected
- The measuring system is overloaded

3.4 Monitoring of Test Resources

In the framework of quality assurance the measuring-related properties of the balance and, if applicable, the testing weight, must be checked regularly. The responsible user must define a suitable interval as well as type and scope of this test. Information is available on KERN’s home page (www.kern-sohn.com with regard to the monitoring of balance test substances and the test weights required for this. In KERN’s accredited DKD calibration laboratory test weights and balances may be calibrated (return to the national standard) fast and at moderate cost.

4 Basic Safety Precautions

4.1 Pay attention to the instructions in the Operation Manual

	Carefully read this operation manual before setup and commissioning, even if you are already familiar with KERN balances. All language versions contain a non-binding translation. The original German is binding.

4.2 Personnel training

The appliance may only be operated and maintained by trained personnel.

5 Transport and storage

5.1 Testing upon acceptance

When receiving the appliance, please check packaging immediately, and the appliance itself when unpacking for possible visible damage.

5.2 Packaging / return transport

	⇨ Keep all parts of the original packaging for a possibly required return. ⇨ Only use original packaging for returning. ⇨ Prior to dispatch disconnect all cables and remove loose/mobile parts. ⇨ Reattach possibly supplied transport securing devices. ⇨ Secure all parts such as the glass wind screen, the weighing platform, power unit etc. against shifting and damage.

6 Unpacking, Setup and Commissioning

6.1 Installation Site, Location of Use

The balances are designed in a way that reliable weighing results are achieved in common conditions of use.
You will work accurately and fast, if you select the right location for your balance.

Therefore, observe the following for the installation site:

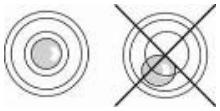
- Place scales on a stable, even surface;
- Avoid extreme heat as well as temperature fluctuation caused by installing next to a radiator or in the direct sunlight;
- Protect the balance against direct draughts due to open windows and doors;
- Avoid jarring during weighing;
- Protect the balance against high humidity, vapours and dust;
- Do not expose the device to extreme dampness for longer periods of time. Non-permitted condensation (condensation of air humidity on the appliance) may occur if a cold appliance is taken to a considerably warmer environment. In this case, acclimatize the appliance for ca. 2 hours at room temperature.
- Avoid static charge of goods to be weighed or weighing container.

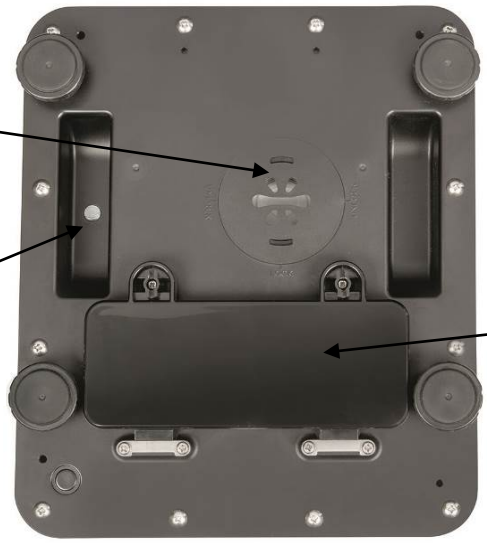
Major display deviations (incorrect weighing results) may be experienced should electromagnetic fields (e.g. due to mobile phones or radio equipment), static electricity accumulations or instable power supply occur. Change location or remove source of interference.

6.2 Unpacking and placing

Carefully remove the balance from the packaging, remove plastic cover and setup balance at the intended workstation.

Level balance with foot screws until the air bubble of the water balance is in the prescribed circle.





Membrane for protection type IP68

6.2.1 Scope of delivery

Serial accessories:

- Balance
- Weighing pan
- Operating manual
- 4 x 1.5V size D batteries

6.3 Battery operation

The operating time of the batteries with background illumination is 200 h, without background illumination 250 h.
In menu you can activate the AUTO-OFF function, see chap. 9.3. According to menu settings, the balance switches automatically off in order to spare the battery.

Insert rechargeable battery:

	⇨ Open battery compartment. ⇨ Move both levers 90° to the left

English

<table>
<tr><td>  </td><td>⇨ Insert 4 x 1.5V size D batteries.</td></tr>
<tr><td>  </td><td>⇨ Close the battery compartment cover.
⇨ Move both levers 90° to the right

Ensure that the cables are not squeezed.</td></tr>
</table>

English

6.4 Initial Commissioning

In order to obtain exact results with the electronic balances, your balance must have reached the operating temperature (see warming up time chap. 1).
For this warm-up period the scale must be connected to the power supply (batteries).
The accuracy of the balance depends on the local acceleration of gravity.
Strictly observe hints in chapter Adjustment.

7 Adjustment

As the acceleration value due to gravity is not the same at every location on earth, each balance must be coordinated - in compliance with the underlying physical weighing principle - to the existing acceleration due to gravity at its place of location (only if the balance has not already been adjusted to the location in the factory).
This adjustment process must be carried out for the first commissioning, after each change of location as well as in case of fluctuating environment temperature. To receive accurate measuring values it is also recommended to adjust the balance periodically in weighing operation.

7.1 Adjusting

Carry out adjustment as close as possible to the maximum load of the scales)see chap. 1 „Technical data“). The accuracy of the adjustment weight must correspond approximately to or, if possible, be better than, the readability **d** of the balance.
Info about test weights can be found on the Internet at: http://www.kern-sohn.com

Procedure when adjusting:
Observe stable environmental conditions. A warming up time (see chapter 1) is required for stabilization.

7.1.1 Adjustment

Operation
⇨ Start balance by pressing ON →0←. ⇨ Press BG NET and ON →0← at the same time in weighing mode. ⇨ **01 FnC** appears
⇨ Select **02 EC** using button UNIT. ⇨ Confirm with TARE button ⇨ The adjustment weight to be used appears.
⇨ Confirm by pressing the TARE button (the displayed adjustment weight flashes) ⇨ Place the adjustment weight ⇨ Confirm by pressing the TARE button ⇨ In case of successful adjustment the balance beeps 3 times.

English

8 Operation

8.1 Weighing

⇨ Start balance by pressing ON →0←.

⇨ The balance will carry out a self-test

⇨ As soon as the weight display shows „0.0“ and the triangle symbol ▼ above the stability display ◣◢ appears, the scale is ready for weighing.

i	▪ However, you can reset the weighing scale to zero by pressing the ON →0← button.

⇨ Switch off balance using OFF.
The „0.0“ display disappears and the balance is switched off.

8.2 Taring

The tare weight of any preloads can be deducted by pressing a button so that the actual weight of the weighed material is displayed in subsequent weighings.

	⇨ Put on weighing receptacles and press TARE. The zero display appears, and above the reset symbol →0← the stability symbol ◣◢ and the net weight symbol **NET** the triangle ▼ appears. The weight of the container is now internally saved.
	⇨ Place goods to be weighed in the weighing container. The **net weight** of the goods to be weighed is displayed.
	The weight of the weighing container will be displayed as a minus number (=gross weight) after removing the weighing container.

English

	The tare weight is saved until it is deleted. Remove the load from the balance and press TARE. The zero display appears and the triangle ▼ above the net weight symbol **NET** vanishes.
	**Gross weight:** ⇨ Press TARE as long as the weighing container and the object to be weighed are on the weighing plate. ⇨ Remove the object to be weighed as well as the weighing container. The gross weight is displayed as a negative value.

English

8.3 Background illumination

⇨ Start balance by pressing ON →0←.

⇨ Press BG NET and ON →0← at the same time in weighing mode.

⇨ **01 FnC** appears

⇨ Confirm by pressing TARE

⇨ **FnC 00** appears

⇨ Select **FNC 01** using TARE and ON →0← button.

⇨ Confirm with TARE button

⇨ **bl on/off** appears

⇨ Press the UNIT button to make the required setting and acknowledge by TARE.

⇨ Switch on and switch off the balance.

9 The menu

9.1 Navigation in the menu

⇨ Start balance by pressing ON →0←

⇨ In weighing mode press the ON →0← and the BG NET button at the same time.

⇨ **01 FnC** appears

⇨ Use the UNIT button to change between the main menu items.

⇨ Use the TARE button to select the desired menu.

⇨ Enter the respective number for the required menu.

⇨ Use the TARE button to change between the numeric values.

⇨ Use the ON →0← button to increase the number.

⇨ Use the UNIT button to reduce the number.

⇨ Confirm by pressing the TARE button

English

9.2 Menu overview

Menu item	Function
01 FnC	Access to the settings and functions of the balance.
FnC 01	Setting of background lighting
FnC 02	Setting Auto-off function
FnC 03	Hi / Lo / OK function. (Check weighing)
FnC 04	Reset to standard setting
FnC 05	Not documented
FnC 06	HOLD function
FnC 07	Not documented
02 EC	External adjustment

9.3 Set auto-OFF function

⇨ Start balance by pressing ON →0←

⇨ Press BG NET and ON →0← at the same time in weighing mode.

⇨ **01 FnC** appears

⇨ Confirm with TARE button

⇨ **FnC 00** appears

⇨ Use the TARE button to change between the numeric values.

⇨ Use the ON →0← button to increase the number.

⇨ Use the UNIT button to reduce the number.

⇨ Now enter **FnC 02**

⇨ Confirm by pressing the TARE button

⇨ Now select between the following values:

- 0: No Auto-off function
- 1: After one minute the balance switches off automatically.
- 2: After 2 minutes the balance switches off automatically.
- 9: After 9 minutes the balance switches off automatically.

⇨ Confirm by pressing the TARE button

⇨ Now switch the balance off and on.

English

10 Error messages

Display	Description	Remedy
E1	Zero range exceeded	Unload the balance
E2	Resetting range has not been reached.	Check if the correct weighing plate has been used.
oL	Overload	Unload the balance and adjust again

11 Instant help

In case of an error in the program process, briefly turn off the balance and disconnect from power supply. The weighing process must then be restarted from the beginning.

Fault	**Possible cause**
The displayed weight does not glow.	▪ The balance is not switched on.
	▪ Batteries are inserted incorrectly or empty
	▪ No batteries inserted.
The displayed weight is permanently changing -	▪ Draught/air movement
	▪ Table/floor vibrations
	▪ Weighing pan has contact with other objects. ▪ Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)
The weighing value is obviously wrong	▪ The display of the balance is not at zero
	▪ Adjustment is no longer correct.
	▪ Great fluctuations in temperature. ▪ The balance is on an uneven surface. ▪ Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)

Should other error messages occur, switch balance off and then on again. If the error message remains inform manufacturer.

12 Servicing, maintenance, disposal

12.1 Cleaning

Before cleaning, please remove batteries from the appliance

Please do not use aggressive cleaning agents (solvents or similar agents), but a cloth dampened with mild soap suds. Ensure that no liquid penetrates into the device and wipe with a dry soft cloth.
Loose residue sample/powder can be removed carefully with a brush or manual vacuum cleaner.

Spilled weighing goods must be removed immediately.

12.2 Servicing, maintenance

The appliance may only be opened by trained service technicians who are authorized by KERN.
Before opening, disconnect from power supply.

12.3 Disposal

Disposal of packaging and appliance must be carried out by operator according to valid national or regional law of the location where the appliance is used.